Aviation Safety Investigation Report 199604023

Burkhart Grob Flugzeugbau Grob

07 December 1996

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Occurrence Number: 199604023 **Occurrence Type:** Accident
Location: Jandakot, Aerodrome
State: WA **Inv Category:** 4
Date: Saturday 07 December 1996
Time: 1221 hours **Time Zone** WST
Highest Injury Level: None

Aircraft Manufacturer: Burkhart Grob Flugzeugbau
Aircraft Model: G-115C2
Aircraft Registration: VH-BBX **Serial Number:** 82027/C2
Type of Operation: Instructional Solo
Damage to Aircraft: Substantial
Departure Point: Jandakot WA
Departure Time: 0955 WST
Destination: Jandakot WA

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	Student	100.0	100

Approved for Release: Monday, December 16, 1996

The pilot reported that there had been some nosewheel vibration, described as slight, during the takeoff and that the aircraft had wanted to yaw away from the centreline. He had been able to regain the centreline with the use of moderate rudder input. Otherwise the takeoff was reported as normal.

During the landing roll, following the completion of a solo navigation exercise, the nose of the aircraft descended further than expected when the pilot attempted to lower the nosewheel onto the runway. He opened the throttle to complete a go-round however, the propeller began striking the runway before this could be completed. The go-around was abandoned and the aircraft brought to a stop on the grass to the left of the flight strip.

Inspection found that the nosewheel and folk were missing and that the aircraft had slid to a stop on the nosewheel-folk attachment plate at the bottom of the nosewheel strut. The nosewheel tyre had made contact with the lower fuselage at some stage. The nosewheel was not located during an inspection of the airfield. The left main-gear leg was found to be bent slightly rearwards. Both propeller blades were scored and bent at the tips. No other damage to the landing gear was evident.

The nosewheel and folk were found, on a beach north of Perth/Jandakot, one week after the occurrence. It was apparent the nosewheel had fallen from the aircraft during the navigation training flight.

The nosewheel folk was made of carbon-fibre material and information from a composite expert indicates some the carbon fibres had been damaged when an excessive side-load had been applied to the nosewheel structure. Despite the damage, the folk did not fail completely at that time. It is likely this initial damage occurred prior to the flight on which the nosewheel fell off.

It is possible the damage was not evident to the pilot during his preflight inspection prior to the navigation training flight. Delamination of composite structures, following excessive loading, usually shows up as a white discolouration of the naturally black material. The black, composite, folk had been pained white to match the aircrafts colour scheme. This probably disguised any signs of delamination.

Additional loads, during the takeoff and possible movement in flight, caused the damaged folk structure to fail completely and the nosewheel was then able to fall free, colliding with the lower fuselage on the way.

The type and extent of damage to the left main gear and the lack of any other damage to the nose structure indicates that the side loads were applied either during a landing with the aircraft yawed to the right or when the aircraft was turned to the right, on the ground, at too high a speed. It is unlikely the damage was the result of a heavy landing or collision with an object. The initial damage probably occurred during night flying training on the evening prior to this occurrence although, nothing unusual was reported. Neither of the possible reasons may have appeared worth reporting to the maintenance section at the time, particularly if there was no apparent loss of function.